BIENNIAL REPORT

Short-Term and Long-Term Fund Viability



Petroleum Tank Release Cleanup Fund

2011-2012

Petroleum Tank Release Compensation Board 1100 North Last Chance Gulch P.O. Box 200902 Helena, Montana 59620-0902

Petroleum Tank Release Compensation Board

The Petroleum Tank Release Compensation Board, established under §2-15-2108, Montana Code Annotated (MCA), consists of seven members appointed by the Governor. The Board is administratively attached to the Department of Environmental Quality. The members presiding in the positions established by law, and their positions at the time of the writing of this report are:

Position Held	Member Name	Address	Term Ends*
Representative of the financial or banking industry	Steve Sendon	60 Wrangler Dr Bozeman, MT 59718	June 30, 2014
Representative of petroleum services industry or a representative of the petroleum release remediation consultant industry	Roger A. Noble Presiding Officer	PO Box 8027 Kalispell, MT 59904	June 30, 2013
Representative of independent petroleum marketers and chain retailers	Jerry Breen	PO Box 10 Choteau, MT 59422	June 30, 2013
Representative of the general public	Timothy McDermott	MSU PO Box 173120 Bozeman, MT 59717	June 30, 2012
Representative of the service station dealers	Roy Morris Vice Presiding Officer	PO Box 3839 Butte, MT 59702	June 30, 2012
Representative of the insurance industry	Karl Hertel	2596 Nelson Road Moore, MT 59464	June 30, 2013
Person with a background in environmental regulation	Kate Cassidy	565 Somers Ave Whitefish, MT	June 30, 2014

Petroleum Tank Release Cleanup Fund

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Executive Summary

Revenue from fuel use is expected to remain steady over the next biennium. Total revenue from gas, diesel, and aviation fuel increased between 1995 and 2006, flattened between 2006 and 2008, declined in 2009, and began increasing again in 2010. The increase in total fuel revenue is due primarily to the use of diesel fuel for transportation. The U.S. Department of Energy predicts an increase in diesel fuel use over the next several years and a decline in gasoline use due to corporate average fuel economy (CAFE) standards. Both the Montana Department of Transportation and Legislative Fiscal Division (LFD) expect fuel use to increase in 2012 and 2013, however they are not expected to be above the 2008 revenues. Given all the information reviewed, revenues in the coming biennium are expected to remain near (within 2%) of the current annual revenues.

Revenues continue to be outpaced by the increase in cost of goods sold. The Consumer Price Index indicates an annual increase until 2009, when it becomes flat and then returns to an annual increase. Total fee revenue exhibits an increase until 2006, a decline in 2009 and returns to a annual increase in 2010 through 2012. The rate of increase for total fee revenue is less than the rate of increase for the Consumer Price Index. In addition, total fee revenues are flat from 2006 through 2008, while the consumer price index increases. The total fee revenue declined in 2009, while the consumer price index remained steady for 2009 and in 2010, the consumer price index rose while total fee revenue remained steady. The divergence between total fee revenue and the Consumer Price Index indicates that the fund currently has only 77% of the buying power it had in 1995.

Fund administrative expenses are consistent with the consumer price index. There are spikes in the administrative expenses due to subrogation activities, which are off-set by the funds recovered from owners/operators' insurance carriers. Other fluctuations in administrative expenses are caused by legal expenses associated with seeking cost

recoveries. Claim expenditures are quite variable and are difficult to predict. The Board is obligating funds by highest priority cleanup activity at a rate consistent with expected available funding. Current claim expenditures are considered to be the best estimate of the future expenditures.

The number of releases discovered each year has taken an upswing in recent years and the cleanup of existing releases continues. Release discoveries remain correlated to tank closures which have, in the past, resulted from imposed regulatory requirements. There do not appear to be any regulatory changes in the coming years that would have any significant impact on the number of tank closures. The number of releases over the coming biennium is expected to remain steady.

Recent Federal and State regulatory changes are not expected to influence tank closures; however, they are aimed at reducing the number of releases and the severity of contamination resulting from new releases. The Energy Policy Act of 2005 and State regulations being implemented to conform to this act will assist with preventing releases. The implementation of spill prevention control and countermeasure (SPCC) requirements at aboveground petroleum storage facilities will help to minimize impacts from a release. Senate Bill 9 (2011) is expected to assist with long-term fund solvency through the establishment of petroleum mixing zones. The Board continues to promote a self-inspection checklist for aboveground storage tanks to improve aboveground storage tank operation and management.

The Board continues to look for ways to encourage insurance companies to make pollution coverage available for petroleum storage tank owners in Montana. The Board is communicating with some insurance providers, and the insurance providers are monitoring the regulatory and fund administrative changes. Insurance is uncertain and does not cover the diversity of releases covered by the fund. Therefore, collection of the petroleum tank release cleanup fee and this program is necessary to assist owners with meeting petroleum cleanup challenges and financial responsibility requirements.

Petroleum Tank Release Cleanup Fund

Introduction

America has used petroleum as an energy source since the 1850s. Kerosene was commonly used to light America's homes before the arrival of the electric light bulb. In 1892, the "horseless carriage" required gasoline as an energy source. By 1920 there were nine million motor vehicles in this country and gas stations were opening everywhere. However, this growth has left behind a legacy of industrial and commercial properties across Montana with a variety of real and perceived petroleum contamination problems.

The Petroleum Tank Release Cleanup Fund (Fund) assists Montana in meeting the cleanup challenges related to years of petroleum use in the State, as well as to current use of petroleum products. By working to clean up these contaminated properties we bring together government, businesses, community leaders, and citizens to assure that properties remain a vibrant part of the community and to maintain the healthy environment we have come to enjoy as Montanans – a place where our children can grow, our families can thrive and the economy can prosper.

The Fund was established in 1989 and is financed through a fee levied on distribution of petroleum products within the State. The Fund is a state special revenue fund established in §17-2-102, Montana Code Annotated (MCA). It is administered by the Petroleum Tank Release Compensation Board and is statutorily appropriated, as provided in §17-7-502, MCA, for the purposes provided for under subsections (3)(c) and (3)(d) of that section. Administrative costs under subsections (3)(a) and (3)(b) must be paid pursuant to a legislative appropriation.

The challenge put before us demands commitment, cooperation, and a common vision tailored to the needs of Montana. Communities, both urban and rural, need to make advances toward sustainability by continued use of properties affected by past petroleum contamination, and Montana should continue to develop processes that help prevent

contamination of properties in the coming decades. The purpose of this report is to provide information to assist and guide the Board, the Department of Environmental Quality (DEQ) and the legislative body in establishing those desirable goals that should be considered by those who are charged with ensuring and administering funding for environmental corrective action programs and projects to clean up petroleum contamination at properties across the state.

This report presents the findings, research methods and descriptive analyses used to examine the viability of the Fund. It is intended to provide useful information about factors impacting the petroleum release cleanup program and the Fund.

Trends in Fund Revenue

The main revenue source for the Fund is a fee levied on distribution of petroleum products within the state. The Fund was established to pay for allowable costs associated with cleanup of releases from petroleum storage tanks (§75-11-313, MCA). The Fund receives proceeds from fees levied on gasoline, diesel, and aviation fuels, which are, on average, 61%, 35%, and 4% of the fuel revenue, respectively. The diesel classification includes distributed fuels sold as heating oil. Additional revenue sources include the Board's subrogation activity and earned interest.

Fuel revenues, depicted in Table 1, below, indicate that 2000, 2006 and 2012 had relatively high fund revenues. As can be seen from the total revenues depicted in Table 1, there were other revenues that also contributed to the increase in total fund revenues for those years. Much of that other fund revenue is attributable to subrogation recoveries, especially for 2006.

Subrogation is a general principle of law that allows the Board to recover those payments from the insurance company legally liable for the corrective action, if there is

an applicable insurance policy. In this recovery process, the Board assumes the legal rights of the owner/operator for whom the Board has paid expenses in regard to a claim against an insurance company for a covered loss paid on behalf of the owner/operator. To date, these additional revenues have contributed approximately 3.3% of total revenues.

Historical

Revenues of over \$130 million have been received since the inception of the Fund. Table 1 lists the total revenue per year for fiscal year (FY) 1990 through FY 2012. This covers a period of twenty three consecutive years, with average annual fee revenue of \$5.86 million. This average, however, includes years when fees were not collected for the entire year. Collection of the fee was suspended during FY 1992,

Table 1 — Total Revenue by Year				
Fiscal	Fuel Revenue	Total Revenue		
Year				
1990	\$4,279,437.24	\$4,424,870.32		
1991	\$4,732,448.59	\$5,167,398.46		
1992	\$1,523,687.95	\$1,962,804.40		
1993	\$206,400.18	\$208,585.18		
1994	\$4,967,452.92	\$5,112,778.38		
1995	\$5,675,845.97	\$5,901,317.96		
1996	\$5,807,832.51	\$5,976,382.36		
1997	\$5,910,993.62	\$6,027,122.56		
1998	\$6,007,973.25	\$6,107,358.58		
1999	\$6,013,468.40	\$6,183,625.77		
2000	\$6,248,375.37	\$6,428,345.38		
2001	\$6,169,082.64	\$6,319,922.17		
2002	\$6,159,618.34	\$6,268,611.50		
2003	\$6,268,885.49	\$6,333,823.91		
2004	\$6,519,302.15	\$6,566,672.04		
2005	\$6,654,184.36	\$6,696,950.09		
2006	\$6,820,875.08	\$7,847,636.39		
2007	\$6,825,951.12	\$6,994,593.97		
2008	\$6,804,407.96	\$6,965,033.31		
2009	\$6,487,586.16	\$6,491,533.88		
2010	\$6,505,347.92	\$6,528,344.61		
2011	\$6,802,571.91	\$6,914,969.82		
2012	\$6,953,183.00	\$7,367,329.00		

FY 1993, and FY 1994 because the fund balance had reached the legislatively established maximum, and collection was not resumed until the fund balance fell below the legislatively established minimum. The average annual fee revenue increases to \$6.55 Million per year for the years beyond 1994. Revenue acquired from petroleum fuels sold in the State exhibit an increasing trend for the years following 1994, when the fee was collected for the entire year. Annual revenues from fuel for FY 1990 through FY 2012 have been plotted against fiscal years in Figure 1, below. The suspension of the fee on fuel is clearly evident in the revenue from fuel received in both FY 1992 and FY 1993, and possibly in FY 1994. Given the suspension of the fee



Figure 1 — Revenue from Fuel by Year

on fuel for part or all of fiscal years 1992 through 1994, and for the purposes of analysis, revenues have been separated into two parts: early revenue (FY 1990 – FY 1994), and subsequent revenue (FY 1995 – FY 2012). When attention is focused on the later eighteen years, the data exhibit a fairly linear trend (see Figure 1, above). An incline is evident in the slope of a least-squares analysis (see definitions) representing a straight line that best fits the revenue from fuel for fiscal year 1995 through fiscal year 2012. The fitted line indicates that revenue from fuels sold in the State increased by approximately \$68,000 each year over the 18 years. Although the trend line indicates an increasing trend, there have been periods when revenue has remained flat and other periods when revenue has declined. The last four years have been below the trend line and have reduced the average annual increase by more than \$20,000 per year.

The fuel revenue is from fees levied on gasoline, diesel, and aviation fuels, each of which exhibits a different trend. Revenue produced from each of the three categories of petroleum product is shown in Figure 2, below.





The plotted data indicate that diesel fuel revenue has the steepest incline. This incline is evident in the least-squares analysis (see definitions) used to calculate a straight line that best fits the revenue data for the fifteen-year period, for each of the fuel categories. The slopes of the lines predicted from a linear regression are \$4,387, \$60,705 and \$2,806 per year for gasoline, diesel, and aviation fuels, respectively. The slope provides an estimate of the annual increase in revenue for each category. Even though the slopes of the three trend lines are all positive, gasoline and aviation fuel revenues do not exhibited as significant a trend as diesel.

Revenue and Inflation

It is important to recognize that since the Fund's revenue is generated from a flat fee levied on each gallon of fuel distributed in Montana, the increases in the program's operating and cleanup costs over time can only be offset by increased fuel use. To obtain a better understanding of the status of the Fund, one needs to consider how the ever-increasing cost of goods and services compares to the revenue generated by the distribution of fuel.

		СРІ				
	Consumer	Re-indexed	Decimal	Transformed	Fund Fee	
Year	Price Index	to 1995	Form	CPI	Revenue	Difference
1995	152.4	100.000	1.00	\$5.675846	\$5.675846	\$0.00
1996	156.9	102.953	1.03	\$5.843440	\$5.807833	-\$35,607.34
1997	160.5	105.315	1.05	\$5.977515	\$5.910994	-\$66,521.33
1998	163	106.955	1.07	\$6.070623	\$6.007973	-\$62,649.41
1999	166.6	109.318	1.09	\$6.204698	\$6.013468	-\$191,229.36
2000	172.2	112.992	1.13	\$6.413259	\$6.248375	-\$164,883.66
2001	177.1	116.207	1.16	\$6.595750	\$6.169083	-\$426,667.50
2002	179.9	118.045	1.18	\$6.700031	\$6.159618	-\$540,412.43
2003	184	120.735	1.21	\$6.852727	\$6.268885	-\$583,841.93
2004	188.9	123.950	1.24	\$7.035219	\$6.519302	-\$515,916.38
2005	195.3	128.150	1.28	\$7.273574	\$6.654184	-\$619,389.90
2006	201.6	132.283	1.32	\$7.508206	\$6.820875	-\$687,330.61
2007	207.3	136.024	1.36	\$7.720491	\$6.825951	-\$894,540.15
2008	215.3	141.273	1.41	\$8.018436	\$6.804408	-\$1,214,027.98
2009	214.5	140.748	1.41	\$7.988641	\$6.487586	-\$1,501,055.31
2010	218.1	143.110	1.43	\$8.122717	\$6.505348	-\$1,617,368.66
2011	224.9	147.572	1.48	\$8.375970	\$6.802572	-\$1,573,397.62

Table 2 — Fund revenue and Transformed Consumer Price Index

The Consumer Price Index (CPI) is used to measure inflation. The CPI, also called the cost-of-living index, is a measure of the price of a set group of goods and services. The amount of inflation is measured by the change in the cost of that group of goods and services over time. The CPI can be scaled to a base year to provide a clearer picture of

what is happening to the cost of goods and its effects on the purchasing power of revenue or income. For example, a scaling of the CPI could indicate what the cost for a group of goods and services would be in FY 2011 if it cost \$6 million (the approximate annual revenue to the fund) to purchase those same goods and services in FY 1995.

Transformed consumer price index values and the Fund's fee revenue from FY 1995 through FY 2011 are provided in Table 2, above, along with the differences between the yearly values (*Annual Average Consumer Price Index for All Urban Consumers*, <u>U.S.</u> <u>Department of Labor and Statistics CPI Detailed Report</u> – May 2012). Note that the base CPI of 152.4 is just a number; it is not dollars, nor is it what a typical consumer actually pays. It is just an index number that is used as a base to determine the inflation





Fiscal Year

rate in subsequent years. The number 152.4 is set to the CPI base equaling 100 percent, which can also be expressed in decimal form. In subsequent years, the base

number of 100 percent will be increased by the same amount as the increase in general prices.

The fund fee revenue and transformed CPI (see table 2) indicates that the purchasing power of the Fund continues to decline each year. The cost of goods and services, indicated by the transformed CPI, is growing more rapidly than Fund revenue. The Fund Fee Revenue did trend closely with the CPI from 2009 to 2011. This departure of revenue from the CPI is evident in Figure 3, above, which depicts the transformed CPI and Fund's fee revenue for FY 1995 through FY 2011. The approximate cost of \$5.5 million worth of goods and services purchased in FY 1995 increased each year by about \$173,000, compared to the average increase in fuel revenue of \$68,000. Annual increases for CPI and fuel revenue were estimated using a least-squares regression analysis to fit a linear line through the data. The average difference between the CPI and the Fund revenue values is approximately \$104,816 per year. The divergence leads to a reduction of more than \$1.6 million in purchasing power from 1995 to 2012.

Future Revenue Projections

Revenues predicted from the sale of fuels in Montana are expected to increase. Historical revenues may provide the best available estimate for future revenue projections. Performing a least-squares analysis to calculate a straight line that best fits the historical fuel revenue data for the years that were considered to be representative of a complete year (1995 - 2012) yields the linear function y = 0.0678x - 129.39. This regression, as noted above, indicates that fuel revenues increased by approximately \$68,000 each year, on average, from 1995 - 2012. The Biennial Report for 2010 estimated an annual increase of \$79,000 each year between 1995 and 2009 from a linear function of y = 0.0787x - 151.31. It is important to recognize that gasoline sales are a function of the price per gallon of gasoline, vehicle fuel economy, and economic conditions and as such are highly variable. Since revenues in recent years exhibit an increasing trend, perhaps the best estimate for future fuel revenue is to expect increases in revenues consistent with the least-squares predictions for each fuel. The linear trends indicate that the Fund could expect combined fuel revenues to increase by approximately \$68,000 each year, with diesel contributing \$61,000.00 to the expected annual revenue increase, gasoline accounting for \$4,000.00, and aviation fuel accounting for \$3,000.00.

In all sectors, except transportation, fuel consumption is expected to remain flat through 2035 according to the U.S. Department of Energy. The Energy Information Administration (EIA), which provides official energy statistics from the U.S. Government, estimates the growth in demand for petroleum fuels is effected by increasing use of biofuels. In their report entitled *Annual Energy Outlook 2012 with Projections to 2035*, released in June 2012 (Report #: DOE/EIA-0383(2012)), the EIA predicts that the U.S. Corporate Average Fuel Economy (CAFE) standards covering model years 2017 through 2035 would reduce projected petroleum use; however, this is outside a four year projection. Consumption in the transportation sector, which accounts for 72 percent of total petroleum and other liquids consumption in 2035, is expected to grow by 3 percent from 2010 to 2035. Motor gasoline, ultra-low-sulfur diesel, and jet fuel are the main fuels consumed in the transportation sector.

The November 19, 2010 Revenue Estimate Recommendations report prepared by the Montana Legislative Fiscal Division (LFD) predicts that gasoline use will increase by approximately 1.9% per year and that diesel use will increase by 1% per year. Although this indicates an increase in revenue, it is not consistent with the tank fee revenue linear trends. The least-squares trends on the fund revenue indicate that revenue from gasoline will increase by 0.1% per year and revenue from diesel will increase by 1.9% per year, resulting in a total revenue increase of 1% per year.

The 2010 Biennial Report predictions estimated fuel revenues to remain constant for 2010 through 2013, and resulted in a revenue prediction that was slightly lower than revenues received for both 2011 and 2012.

Therefore, the linear regression was considered to be a good predictive tool for the coming biennium. The oil drilling within the State and high prices for natural resources, crops, and livestock, along with the economic recovery, appear to be affecting fuel use in Montana, with fuel revenues on the increase

Fiscal Year	Projected Revenue
2013	\$7.0
2014	\$7.1
2015	\$7.2
2016	\$7.2

Table 3 — Projected Revenue

for fiscal years 2011 and 2012. The revenues for all three categories of fuel increased in fiscal year 2011 and 2012. Therefore, the linear regression line may be the best predictor of future revenues. This prediction of fuel revenues using the linear least-squares function is depicted in Table 3, above.

Trends In Expenditures

Fund administrative expenses appear to have a pattern consistent with the cost of living, while claim expenditures exhibit no definable pattern. Following an initial rapid growth period (FY 1990 - FY 1994), personal services and operating expenses indicate a pattern and trend correlated to the consumer price index. An analysis of claim expenditures indicates the average expenditures for the last eighteen years, which follow a start-up period, is likely the best predictive technique of future expenditures.

Administrative Expenses

The growth of administrative expenses continues to be consistent with the consumer price index. The expenses incurred by the Fund that are associated with administrative activities by the Board and regulatory activities by the Department of Environmental Quality (Department) consist primarily of two categories; operating expenses and personnel expenses. Because Fund-supported Department costs have not always been

separate from Board costs in the State of Montana financial system, the summary provided in this report will examine the combined expenses for both the Board and the Department. Personal services, operating expenses, and the combined total

(in millions) for FY 1990 through FY 20012 are provided in Table 4, right. Personal services consist of salaries and benefits for persons engaged in the following: review of materials for eligibility determination; analysis of claims for actual, reasonable, and necessary costs; evaluation of work plans for cost control; technical management of corrective action for releases: regulatory oversight and other associated administrative activities. Operating expenses include direct operating, contracting, general and administrative expenses. Personal services,

administrative expenditures

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Fiscal Year	Personal Services	Operating Expenses	Total	Transformed CPI
1990	\$0.04	\$0.05	\$0.08	\$1.06
1991	\$0.21	\$0.13	\$0.34	\$1.10
1992	\$0.41	\$0.20	\$0.62	\$1.13
1993	\$0.55	\$0.25	\$0.80	\$1.17
1994	\$0.61	\$0.36	\$0.97	\$1.20
1995	\$0.74	\$0.44	\$1.18	\$1.23
1996	\$0.74	\$0.46	\$1.20	\$1.27
1997	\$0.81	\$0.39	\$1.20	\$1.30
1998	\$0.85	\$0.48	\$1.33	\$1.32
1999	\$0.85	\$0.49	\$1.35	\$1.35
2000	\$0.78	\$0.52	\$1.31	\$1.39
2001	\$0.85	\$0.53	\$1.38	\$1.43
2002	\$0.92	\$0.58	\$1.50	\$1.45
2003	\$1.01	\$0.59	\$1.60	\$1.49
2004	\$0.95	\$0.56	\$1.51	\$1.53
2005	\$1.00	\$0.61	\$1.61	\$1.58
2006	\$1.10	\$0.91	\$2.00	\$1.63
2007	\$1.09	\$0.69	\$1.78	\$1.68
2008	\$1.08	\$0.59	\$1.68	\$1.74
2009	\$1.19	\$0.58	\$1.77	\$1.73
2010	\$1.24	\$0.58	\$1.82	\$1.76
2011	\$1.25	\$0.76	\$2.00	\$1.82
2012	\$1.25	\$0.53	\$1.78	\$1.85

 Table 4 — Personal services and operating expenses

operating expenses, and the combined total administrative expenditures for FY 1990 through FY 20012, along with the transformed CPI, are depicted in Figure 4, above. Figure 4 shows a sharp rise in expenses as the program matured over the first four years. Total combined expenditures then begin to trend more closely with the CPI. In 2006 and 2011 there were temporary increases in operating expenses. The 2006 increase is associated with a subrogation contract and reflects contingent expenses





connected with a significant insurance subrogation recovery. Contingent contract expenses are only incurred when there is an insurance subrogation recovery. The 2011 increase is also associated with legal activity on a subrogation contract.

Future Administrative Expense Projections

The more recent expenditures are likely the best available information to use to provide an estimate for future administrative expense projections. The expense curves presented in Figure 4, above, can be viewed in two parts. These two periods have differing rates of growth. The two periods are most evident in the combined total curve, but can be observed to a lesser extent in the curves representing personal services and operating expenses. The early period (FY 1990 – FY 1995) is associated with the initial growth and development of the program and reflects a steeply increasing trend as the program staffed-up to meet legislative expectations. The later years (FY 1995 – FY

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2012) reveal a shallower increasing curve that is more representative of stabilized operations.



Figure 5 — Linear Regression Using Recent Expenses

The personal services, operating, and total expenses for the stabilized operations period from 1995 through 20012 are depicted in Figure 5, above. The total operating expenses include the contingent contracted expenses and therefore exhibit a similar increase in 2006 and 2011. There have been contingent contract expenses associated with subrogation activities since 2002. These expenses are quite variable and are not easily predicted. They have been included in the data presented in Figure 5, above, in an effort to provide comprehensive information. However, these expenses are not included in the predictive model to provide a more reliable expenditure projection.

A linear regression model applied to the non-contingent expense data for later years is likely the most reliable predictor of future administrative expenses. If one ignores the expenses associated with recovery from subrogation that may impact administrative expenditures, the fiscal year can be used as the dependent variable in a valuable predictive model. Performing a least-squares linear regression analysis to calculate a straight line that best fits the non-contingent expense data for these later years yields a function that can reasonably predict future expenses. The later years are considered to be representative of more stabilized operations. The linear regression equation for

combined total expenses (without contingent fees) (y = 0.0431x - 84.734) estimates that total costs will increase approximately \$43,000.00 per year. This indicates that expenditures will likely be in step with the cost of living, resulting in total expenditures of \$2 million in FY 2013.

Claim Expenditures

Identifying the controlling parameters for claim expenditure is difficult. The annual claim expenditures for FY 1990 through FY 2012 are listed in Table 5, right. Annual claim expenditures climbed from \$703,653.28 in FY 1990 to \$5.4 million by FY 1995. Taking into account a \$2 million litigation settlement paid as claims in FY 1997 indicates that expenditures for claims from FY 1995 through FY 2012 were quite variable, having a range from about \$3.7 million to \$7.6 million. A graph of the data is provided in Figure 6, below. These data were analyzed using regression techniques on all the data (FY 1990 – FY 2012), as well as on various subgroups of the data. Attempts were made to identify the leading influential parameter(s), including litigation

Table 5 — Claim expenditures by fiscal year				
Fiscal Year	Claims			
1990	\$703,653.28			
1991	\$1,065,514.92			
1992	\$1,585,906.16			
1993	\$2,960,965.77			
1994	\$3,480,161.88			
1995	\$5,394,682.48			
1996	\$5,465,402.00			
1997	\$6,339,423.82			
1998	\$3,748,623.21			
1999	\$4,153,031.36			
2000	\$5,334,095.37			
2001	\$5,799,130.55			
2002	\$5,985,691.11			
2003	\$3,731,611.03			
2004	\$4,844,535.10			
2005	\$4,911,911.04			
2006	\$5,294,311.24			
2007	\$7,554,982.16			
2008	\$5,618,087.36			
2009	\$5,057,747.82			
2010	\$3,375,647.35			
2011	\$4,281,917.67			
2012	\$4,122,148.00			
Total	\$102,809,180.68			

settlements, discovered releases, work plan activity and personal services expenditures. However, no leading indicator was identifiable in the analysis and no predictive model was found to be representative of the data.

Future Claim Projections

The average annual claim expenditure is likely the best available predictor to provide an estimate for future claim expenditure projections. This analysis focused on the data and did not take into consideration any impacts from potential influential outside actions, such as regulatory changes, or any long-term strategic plans. The best predictor of future







claim payments is the average of past expenditures. It is worth noting that the claim expenditures exhibit what appears to be a ramp-up period between FY 1990 and FY 1995. An average can be calculated using the complete set of claim expenditures, or by using only the last 18 years. The average for the complete set of claim expenditures is \$4,383,007.86 and the average of the past 18 years is \$5,056,276.59. The annual claim expenditures for the next several years are projected to be at approximately \$5 million.

The projection was estimated from the simple average. No regression equation was determined to have a reasonable coefficient of determination with the actual claim expenditures.

Exposure to Long-Term Liabilities

Liabilities for the Fund consist of cleanup costs for current releases, future releases and possibly releases where ineligibility has been contested. The liabilities associated with each current active release are impacted by the amount of on-going effort required to accomplish cleanup, amount of insurance coverage for the release, and the facility's compliance. The liabilities associated with future releases are affected by those aspects mentioned for current releases as well as the rate at which new releases are being discovered, and eligibility applications filed. Although contested eligibility releases may be overturned through a Montana Administrative Procedures Act (MAPA) contested case hearing process or Montana District Court, the probability of expenditures for these releases appears to be quite low.

A decrease in newly discovered releases has been seen from 2005 to 2009, but the number has taken an upswing over the last two years. This upswing in the discovery of historical contamination may be a reflection of increasing activity in property development or construction activities in Montana. In fact, five of the historical releases were discovered during utility or road upgrades, six were identified when property was being developed or transferred, and three were found during Brownfield assessments. Brownfield assessments are conducted to assist with development of contaminated or potentially contaminated properties by local communities and development corporations. This upswing in the discovery of historical releases can be viewed as a reflection of increases in property development and infrastructure upgrades taking place throughout the state. As more of these releases are discovered and addressed, fewer are left as a future liability to the Fund. The ongoing efforts by the Department to close releases help reduce the Fund's exposure to long-term liabilities.

Future obligations may be further reduced as a result of federal requirements focused on preventing releases. The federal Energy Policy Act of 2005 resulted in a state requirement that tank owners must upgrade to double-wall underground storage tanks (USTs) if significant alteration to the system is required. Thus, the industry will be migrating to exclusively double-wall tank systems.

The number of tank closures influences the number of releases applying for eligibility. This impacts the Fund's long-term liability. The Environmental Protection Agency's (EPA's) 1988 regulations set minimum standards for new tanks and required owners of existing tanks to upgrade, replace, or close them within ten years (40 CFR Ch I





§280.21). The transition period was characterized by the continuing growth of a national underground storage tank program, realized through the creation of state and local programs.

Petroleum Tank Release Cleanup Fund

In the late 1980s the Department adopted rules implementing new underground storage tank regulations. These underground storage tank regulations likely produced the increase in the number of tank closures seen in the late 1980s and early 1990s, as depicted in Figure 7, above. In 1993, Senate Bill (SB) 196 exempted certain underground storage tanks from the closure requirements of the Montana Hazardous Waste and Underground Storage Tank Act until December 31, 1993. The large number of tank closures in 1993 appears to have resulted from the expiration of this temporary



Figure 8 — Releases by Calendar Year

exemption. The number of tank closures per year declined as rapidly between 1993 and 2000 as they had increased in the prior six years. The spike in 1998 was a result of underground storage tank owners and operators attempting to comply with the federally mandated 1998 deadline for upgrading, replacing, or closing underground storage tanks. Although the tank closures between 2000 and 2012 appear to be fairly flat a least-squares regression analysis of this data indicates that the number of releases is trending downward, with nearly ten fewer releases being discovered each year.

Petroleum Tank Release Cleanup Fund

The number of releases applying for eligibility is most certainly affected by the number of confirmed releases. The number of releases eventually applying for eligibility, along with the number of confirmed releases, by discovery date, between 1988 and 2011, is depicted in Figure 8, above. A visual inspection of the two curves indicates that the number of releases discovered in each year that eventually apply for eligibility correlates with the number of confirmed releases each year. The correlation coefficient of the confirmed releases and the number of releases eventually applying for eligibility (0.940) indicates a very positive relationship between the two sets of data.

The number of confirmed releases, and therefore the number of releases applying for eligibility, still appears to be related to the number of tank closures. The number of



Figure 9 — Comparing Tank Closures to Releases

releases applying for eligibility by discovery date, the number of confirmed releases by discovery date, and the number of tanks closed in a particular year for 1988 through 2011 have been plotted in Figure 9, above. The scale for the number of closures is

indicated on the left, while the scale for the number of releases is provided on the right. The correlation coefficient of the number of tank closures by year and the number of confirmed releases by year (0.823) indicates a high positive relationship between the two sets of data. The correlation coefficient between of the number of tank closures by year and the number of releases applying for eligibility each year (0.665) indicates there is a moderate relationship between closures and requested assistance from the Fund. The spike in closures that occurred in 1993 affects the correlation with releases, though not significantly.

New Releases

An estimate of new releases cannot adequately be obtained from all of the available data on tank closures and releases. However, the last eight years may provide a reasonable estimate. In the three curves depicted in Figure 9, above, the number of tank closures and release discoveries are shown to increase during implementation of the federal and State regulatory framework, to peak in relation to regulatory changes, to decline over a period of several years, and then remain steady for a period of eleven years. With no expectation of significant regulatory changes, it is this steady period that may provide the best estimate of future releases. Although the period from 2000 through 2011 appears to be constant, each of the curves actually exhibits a declining trend over that period of time. Regression analysis indicates that closures decline by about seven each year, confirmed releases decline by nearly seven each year and releases applying for eligibility decline by more than four each year during the nine year period. While regulatory changes are expected to have negligible impact on tank closures and releases discovered, there still remains some uncertainty. The average number of confirmed releases between 2000 and 2011 is 60, with a standard deviation of 26 releases. The average number of releases applying for eligibility between 2000 and 20011 is 35, with a standard deviation of 17 releases. These statistics estimate the number of confirmed release per year to be between 34 and 86, with approximately 18 to 52 applying for eligibility.

The Board is examining strategies associated with development of inspection requirements for aboveground storage tanks (ASTs). This effort is intended to reduce the number and severity of releases from aboveground storage tanks and encourage owners to purchase tank insurance. Many ASTs do not comply with current storage tank standards. Older installations are only required to be in compliance with regulations in place at the time of tank installation. Compliance of existing tanks with current standards is often only required if the AST system is upgraded. Over the long term, compliance with current standards will result in a decline in the number of releases from ASTs. The Board also recognizes that it is important to balance this strategy with available funds.

Impacts of Changes in State and Federal Regulations

The Board monitors developments in various federal and state programs for potential effects on the Fund. Federal activities being monitored include regulations proposed or promulgated pursuant to Spill Prevention Control and Countermeasure (SPCC) Plans under the Oil Pollution Prevention and Response (Oil Pollution Prevention) regulations; and the Corporate Average Fuel Economy (CAFE) regulations, and the development of technical guidance associated with evaluation of petroleum vapor intrusion. State regulatory changes with the potential impact to the Fund include changes to the fire codes used by the Montana Department of Justice, risk-based corrective action requirements expressed in the petroleum mixing zone option to release closure (Senate Bill 97, 2011) and the legislatively mandated closure of a set number of releases per year (House Bill 613, 2011).

The U.S. Environmental Protection Agency (EPA) amended the dates by which facilities with above ground storage tanks (ASTs) must prepare or amend their SPCC Plans (40 CFR 112.3), and implement those Plans to November 10, 2010. The compliance date for farms was extended to May 10, 2013. The purpose of the SPCC rule is to keep petroleum products from reaching navigable waters and adjoining shorelines, and to contain discharges of petroleum products from ASTs. Additional details regarding the

SPCC rule can be found on EPA's Office of Emergency Management webpage http://www.epa.gov/oem/content/spcc).

Petroleum hydrocarbon vapors from leaking underground storage tanks can migrate into inhabited buildings and threaten public health and safety. To address this threat, EPA's Office of Underground Storage Tanks (OUST) is developing petroleum vapor intrusion (PVI) guidance to assist regulators, consultants, and other practitioners in their investigation and assessment of petroleum-contaminated sites where petroleum vapor intrusion may occur. EPA's targeted completion date for the PVI Technical/ Regulatory guidance is Dec. 2013. The guidance will focus on federally-regulated (Subtitle I) underground storage tank (UST) sites, which are typically gas stations.

The Corporate Average Fuel Economy (CAFE) standards may increase fuel economy and therefore reduce fund revenue. The CAFE regulations were first enacted by the US Congress in 1975, and were intended to improve the average fuel economy of cars and light trucks sold. In 2011, the standard was changed to include many larger vehicles. In 2002, a committee of the National Academy of Sciences wrote a report on the effects of the CAFE standard (<u>Effectiveness and Impact of Corporate Average Fuel Economy</u> (<u>CAFE</u>) Standards, Board On Energy and Environmental Systems, 2002). The report's conclusions include a finding that, in the absence of CAFE, and with no other fuel economy regulation substituted, motor vehicle fuel consumption would have been approximately 14 percent higher than it actually was in 2002. Therefore, some of the decline of fuel consumption appears to be attributable to CAFE standards. It is possible that the 2011 change could continue to reduce fuel consumption and therefore reduce the growth rate of fuel used in Montana. This increased fuel economy, combined with poor economic conditions, may result in a reduction in growth or even a decline in fuel sold, creating an even larger disparity between fund revenue and consumer costs.

The Montana Department of Justice (DOJ), Fire Prevention and Investigation Section (State Fire Marshal) changed above ground storage tank regulations through the adoption of the 2009 International Fire Code (IFC) and the repeal of the referenced

sections of the Uniform Fire Code. This change included changes to rules for Flammable and Combustible Liquids, Motor Fuel Dispensing Facilities and Repair Garages, and standards for the Installation of Oil-burning Equipment.

In 2011, at the request of the Montana Environmental Quality Council (EQC), the legislature enacted a risk-based closure alternative through the authorization of a petroleum mixing zone (SB 9). This concept was discussed at the May 2010 EQC meeting under the title of "mixing zones". A PMZ is an area where water quality standards for petroleum and petroleum constituents may be exceeded, subject to specific conditions and consistent with rules adopted under the powers and duties of the Petroleum Tank Release Compensation Board and the Montana Underground Storage Tank Act. A PMZ may be established only under certain conditions. If a petroleum mixing zone is established and maintained, the petroleum release is considered to be resolved, and no further corrective action for the petroleum release is required. The department will issue a no-further-action letter to the owner or operator stating that a PMZ has been established for the release and describing any conditions required to maintain the PMZ. The law provides that when the cleanup of a release has been completed, and residual contamination and the groundwater plume has been appropriately treated, the tank owner or operator can seek designation of a petroleum mixing zone in lieu of monitoring until cleanup has been completed.

Also in 2011, the legislature requested that the EQC review, on at least an annual basis, the cleanup progress toward petroleum tank site closures. Pursuant to House Bill (HB) 613, the Department has developed a list of active releases prioritized by threats to human health and the environment and an anticipated date to closure for all releases. The Department is required to complete 45 closures every 6 months. The Board is monitoring the Department's reports and the Environmental Quality Council's discussions.

Other Board Activities

Since the Board's applicable rules governing the operation and management of petroleum storage tanks are intended to be harmonized with EPA's and the Fire Marshal's current codes, on February 2, 2011, the Petroleum Tank Release Compensation Board held a public hearing to consider the amendment, adoption, and repeal of Board rules. References to the 2003 version of the provisions of the National Fire Protection Association one (NFPA1) and Uniform Fire Code (UFC) (2003) were updated to IFC references. The Board added a rule to ensure that those owners and operators required by 40 CFR Part 112 to have and implement a Spill Prevention Control and Countermeasures (SPCC) Plan have done so. Other amendments were made to make the rules consistent with the Board's statutory authority and to clarify existing provisions in the rule. The changes were consistent with the Board's regulatory authority to determine which state and federal rules pertain to the prevention and mitigation of a petroleum release from a petroleum storage tank. The changes and additions have been adopted and incorporated in the current rules.

The Board is also continuing to work on a self-inspection program for aboveground storage tank systems. The intent is to encourage owners and operators to upgrade facilities to current Fire Marshal-accepted standards and implement measures to prevent spills. The Board has worked with the State Fire Marshal and other interested parties to develop two checklists, which are available on the Board's web site, at: http://www.deq.mt.gov/pet/Forms/PDFS/StorageTankChecklist.pdf and http://www.deq.mt.gov/pet/Forms/PDFS/HeatingOilChecklist.pdf These checklists address bulk storage tanks and heating oil tanks, respectively.

The use of Petroleum Mixing Zones (PMZs) in the remediation and resolution of petroleum releases may reduce remediation costs by allowing reduction in petroleum mass or concentration through naturally occurring physical, chemical, and biological processes, such as; biodegradation, dispersion, dilution, adsorption, and volatilization. The Board is working with the Department and stake holders to implement petroleum mixing zones in an effort to see if the petroleum mixing zones can reduce demand on the cleanup fund.

Availability of Petroleum Storage Tank Liability Insurance

In order to facilitate access to UST insurance, EPA developed a booklet that contains a list of companies, agents, and brokers that have identified themselves as willing to provide UST insurance (EPA 510-B). The list is not comprehensive because there likely are other companies, agents, and brokers who have not yet identified themselves to EPA. The insurance providers in the list may be able to help owners and operators comply with EPA and State financial responsibility requirements by providing a suitable insurance mechanism. The booklet is currently only offered as an online publication. The most current version of the booklet was published July 2012 and is available on the Internet at: http://www.epa.gov/oust/pubs/inslist.htm. EPA will update the list periodically.

EPA recently issued a report titled "EPA Study On The Effectiveness of UST Insurance As A Financial Responsibility (FR) Mechanism". The agency states that they undertook the study to assess the effectiveness of UST insurance as a financial responsibility mechanism and to get a sense of how UST insurance is working under the existing regulatory framework. Anecdotal information that EPA has received indicates that insurance, in some instances, provided less than full reimbursement or payment for remediation expenses or third-party damages associated with releases from USTs. The study findings are inconclusive as to whether UST insurance is effective as an FR mechanism. The report indicates that an analysis of UST insurance policy language revealed certain definitions, terms, and conditions that could pose coverage and claim challenges for UST owners and operators. EPA has been unsuccessful in obtaining data on some sites where insurance was the FR mechanism at the time of the confirmed release, and why that UST insurance did not provide coverage. A litigation review suggests UST pollution insurance policies do not always result in a timely dispense of financing for remediating releases from regulated USTs. EPA acknowledged that the study identified certain aspects of UST insurance that may be at odds with EPA's idea of how and when an FR mechanism should respond to releases. The study discusses several ideas EPA may consider pursuing; however, many of those ideas will likely lead to higher premiums for owners and operators. Some may even result in the refusal or reluctance of insurance carriers to offer UST insurance products. Therefore EPA will weigh a number of factors, including the effect of implementation on the availability and affordability of UST insurance before implementing any of the ideas. Even though this study identified several issues that may hinder the effectiveness of UST insurance policies in providing prompt financing of release cleanups, the extent to which UST insurance as an FR mechanism has led to un-remediated releases or stalled remediation is still unclear.

Most UST insurance policies today are claims-made insurance policies. Claims-made insurance policies provide coverage that depends on both the time of the occurrence and the date of filing or receipt of the claim. These policies often include a retroactive date that is the point in time when coverage first begins. The policy provides coverage for occurrences that happen after the retroactive date for which a claim is filed within the policy period and any extended reporting period. In contrast, occurrence-based insurance policies provide coverage for any occurrence during the policy period, regardless of when it is discovered and when the insurer is notified.

The areas found to be of most concern involve coverage for temporarily out-of-service tanks, retroactive dates, status of UST system at the time of the release, variable coverage for clean up or corrective action costs, and claim notification requirements. In many cases insurance requires the owner or operator to prove the release occurred after the policy inception or retroactive date, but before the tank attained temporary out-of-service status, and the owner must report the release before the end of the policy period.

On June 18, 2012, Carolyn Hoskinson, Director of EPA's Office of Underground Storage Tanks, issued a memorandum to industry groups and state tank fund administrators notifying them of the decision by Zurich American Insurance to quit providing UST insurance. Zurich, one of the major national UST insurance providers over the years, has provided UST insurance policies to many UST owners and operators across the United States. The policies provide coverage for corrective actions and third-party damages. Some in the industry feel that Zurich is calling it quits because claims are exceeding their premium revenues, and those people feel that we are entering a period where it will be tougher to get tank insurance. Consistent with EPA's concerns from their research of UST Insurance as a financial responsibility mechanism, Hoskinson advises owners and operators to carefully discuss their policies with their insurance agents or brokers to ensure owners fully understand the coverage they are purchasing and what their responsibilities are under their policies. She feels it is important for owners and operators to know about their coverage because they do not want to find out after a release has occurred that the policy they bought will not cover them.

In October of 2011 the State Funds Task Force of the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) published a "Guide to Tank Insurance". The topics include insurance policy construction and terminology, Financial Responsibility requirements, types of policies, coverage period, claims reporting requirements, exclusions, and tanks in temporary closure. This document echoes EPA's admonition to know your policy. Claims-made policies will not cover incidents that occur during the policy period but are reported to the insurance company after the policy period expiration date. By federal law, tank insurance policies must include a 6-month extended reporting period. The extended reporting period is important because the owner may not have identified a release as of the date the policy ends. Late claims-reporting is stated to be a leading reason for releases not being covered. Also noted was that some policies are confirmed release policies which do not cover the cost of investigating potential releases.

The Fund encourages the use of insurance by allowing any insurance payments to offset co-payment requirements, provided the owner uses the insurance for first dollar coverage. The Board continues to monitor insurance in the UST industry and communicate with insurance providers in an effort to understand the challenges limiting availability of insurance, and to encourage the use and availability of insurance.

The Petroleum Tank Release Cleanup Fee

The petroleum fund program was established to protect public health and safety and the environment, provide adequate financial resources for partial reimbursement to owners or operators of petroleum storage tank systems for costs, expenses and other obligations incurred as a result of releases of petroleum products from petroleum storage tank systems, provide petroleum storage tank owners with incentives to improve tank facilities in order to minimize the likelihood of accidental releases, and to allow underground storage tank owners to demonstrate financial responsibility as required by the EPA. Financial responsibility, as defined by the EPA, may be demonstrated by a combination options. Even with all the available financial responsibility methods, the Fund continues to play a major active role in the cleanup of releases from underground and aboveground petroleum storage tanks.

Historical and abandoned USTs have been a challenge that petroleum remediation programs have had to address since the beginning of the program. Releases from these types of tanks are not usually the result of the current property owner's operations and the contamination would remain unaddressed for many years if this fund was not available. Releases from historical and abandoned tanks are discovered as a result of construction activities, infrastructure upgrades, and environmental assessments related to property transactions. This topic was discussed in the 2012 Winter Issue of the MUST News. The article mentions that of the 36 releases discovered in Fiscal Year 2011, 21 releases were from tank systems currently in use, while 15 releases were from "historical contamination" (releases associated with "found tanks" or at locations where tanks were

once present and previously removed). As more historical releases are identified, it follows that there should be fewer historic releases remaining.

Since financial responsibility is only required for active underground storage tanks, many of the discovered releases would not likely be remediated without the Fund. Many of the owners are unaware of the subsurface contamination and most environmental insurance policies are focused on coverage for UST systems. Without the Fund, remediation of releases from historical contamination, releases from most aboveground petroleum storage tanks, and some underground storage tanks would be stalled, resulting in delayed cleanup and less protection of public health and safety and the environment.

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Definitions

<u>Consumer Price Index</u> - An index prepared and published by the Bureau of Labor Statistics of the U.S. Department of Labor which measures average change in prices over time in a fixed market basket of goods and services typically purchased by consumers. The Consumer Price Index is one way the government measures the general level of inflation. http://www.bls.gov/cpi/

<u>Coefficient of Determination</u> - Compares the fitted (estimated) curve and actual data, and ranges in value from 0 to 1. If it is 1, there is a perfect correlation between the fitted curve and the data. — At the other extreme, if the coefficient of determination is 0, the fitted equation is not helpful in predicting values.

<u>Correlation</u> - Refers to relationship between two variables during a period of time which indicates whether and how strongly pairs of variables are related.

Fiscal Year - The State of Montana Fiscal Year begins on July 1 of each year and ends on June 30 of the following year.

<u>Least-squares</u> - The method of least-squares analysis assumes that the best-fit curve of a given type is the curve that has the minimal sum of the deviations squared (least square error) from a given set of data. The least-squares line method uses a straight line (y=mX+b) to approximate the given set of data $(x_1,y_1), (x_2,y_2), \dots, (x_n,Y_n)$.

<u>Subrogation</u> - Assuming the legal rights of a person for whom expenses or a debt has been paid. Typically, subrogation occurs when the Board, which pays owners and operators for corrective action costs, sues the insurance company which the owner or operator contends had obligation to indemnify them.

Petroleum Tank Release Cleanup Fund

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